AMENDMENTS TO THE CLAIMS

1. (Cancelled)

2. (Currently amended) ~~The apparatus as recited in claim 1,~~ An apparatus for controlling a base transceiver station in an international mobile telecommunication system having a plurality of the base transceiver station (BTS), at least a base station controller (BSC), a base station management (BSM) and a mobile switching center (MSC), the apparatus comprising:

a local routing means for interfacing the BTS with the MSC, for processing a call and a No. 7 signal for providing alarms occurred in the BSC to the BSM;

a vocoding means for vocoding voice data received through the local routing means;

a global routing means for interfacing among the local router, other local routers and the BSM; and

a clock generating means for generating clocks necessary for controlling the BTS and the BSM, wherein the clocks are based on time and frequency clock signals received from a global positioning system (GPS),

wherein the local routing means includes: (i) an OAM controlling means for generating a switching control signal, a multiplexing/demultiplexing control signal, an ATM (Asynchronous Transfer Mode) switch and protocol control signal and an ATM input/output control signal, thereby controlling a routing of ATM packet data,[[;]] (ii) a switching means for interfacing the ATM packet data from the BTS in response to the ATM switching/protocol control signal, [[;]] (iii) multiplexing/demultiplexing means for multiplexing ATM packet data received through the

McDONNELL BOEHNEN
HULBERT & BERGHOFF LLP
300 SOUTH WACKER DRIVE
CHICAGO, ILLINOIS 60606
TELEPHONE (312) 913-0001

switching means based on the multiplexing/demultiplexing control signal, and for demultiplexing ATM packet data to be transmitted to the switching means, [[;]] and (iv) an ATM input/output interface means for transmitting the alarm from the ATM switch and protocol controlling means to the BSC and transmitting the subscriber data to the vocoding means, in response to the ATM switch and protocol control signal.

3. (Currently amended) The apparatus as recited in claim 2, wherein the multiplexing/demultiplexing means includes:

multiplexing/demultiplexing means for multiplexing the ATM packet data, thereby generating AAL2 signal, and for demultiplexing AAL signal;

signal converting means for converting the AAL2 signals to AAL2' signal; and

an ATM signal adapter handling means for generating ATM cells based on AAL2' signals from the signal converting means.

4. (Currently amended) The apparatus as recited in claim 3, ~~2,~~ further including a controlling means for controlling a signal conversion of the signal converting means and an ATM cell arrangement of the ATM signal adapter handling means.

5. (Original) The apparatus as recited in claim 3, wherein the multiplexing/demultiplexing means includes:

eight line interfaces each for multiplexing four channel signals received from the switching means, and for demultiplexing an input signal, thereby outputting four channel signals;

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HULBERT & BERGHOFF LLP
300 SOUTH WACKER DRIVE
CHICAGO, ILLINOIS 60606
TELEPHONE (312) 913-0001

a first multiplexer/demultiplexer for multiplexing the signals from a first and second line interfaces and generating an AAL2 signal, and for demultiplexing the AAL2 signal, thereby generating two line signals;

a second multiplexer/demultiplexer for multiplexing the signals from a third and fourth line interfaces and generating AAL2 signal, and for demultiplexing the AAL2 signal, thereby generating two line signals;

a third multiplexer/demultiplexer for multiplexing the signals from a fifth and sixth line interfaces and generating AAL2 signal, and for demultiplexing the AAL2 signal, thereby generating two line signals; and

a fourth multiplexer/demultiplexer for multiplexing the signals from a seventh and a eighth line interfaces and generating AAL2 signal, and for demultiplexing the AAL2 signal, thereby generating two line signals.

6. (Original) The apparatus as recited in claim 5, wherein the line interface is 4:1 multiplexer/demultiplexer.

7. (Original) The apparatus as recited in claim 5, wherein the multiplexer/demultiplexer is 4:1 multiplexer/demultiplexer.

8. (Original) The apparatus as recited in claim 2, wherein the ATM switch and protocol control means includes:

ATM subscriber access handler for transmitting AAL2' signals;

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HULBERT & BERGHOFF LLP
300 SOUTH WACKER DRIVE
CHICAGO, ILLINOIS 60606
TELEPHONE (312) 913-0001

ATM switch for switching the subscriber data in response to the ATM switch and protocol control signal from the OAM control processor;

call processor for processing calls and No. 7 signals; and

alarm control processor for collecting alarms occurred in the BSC and transmitting the alarms to the ATM switch.

9. (Original) The apparatus as recited in claim 2, wherein the ATM input/output interface means includes:

a first ATM interface for transmitting the alarm collected by OC-3 interface to the global router;

a second ATM interface, which is a reserved interface, for being used instead of the first ATM interface at a fail of the first ATM interface and for interfacing with another board and;

a third ATM interface for interfacing the data with the vocoding means; and

a fourth ATM interface, which is a reserved interface, for being used instead of the third ATM interface when a capacity of the third ATM interface is insufficient.

10. (Currently amended) ~~The apparatus as recited in claim 1,~~ An apparatus for controlling a base transceiver station in an international mobile telecommunication system having a plurality of the base transceiver station (BTS), at least a base station controller (BSC), a base station management (BSM), and a mobile switching center (MSC), the apparatus comprising:

a local routing means for interfacing the BTS with the MSC, for processing a call and a No. 7 signal for providing alarms occurred in the BSC to the BSM;

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HULBERT & BERGHOFF LLP
300 SOUTH WACKER DRIVE
CHICAGO, ILLINOIS 60606
TELEPHONE (312) 913-0001

a vocoding means for vocoding voice data received through the local routing means, wherein the vocoding means includes: (i) an enhanced vocoder interface assembly connected to the local router and the MSC, for interfacing the ATM cells,[[;]] and (ii) an enhanced vocoder operating assemblies connected to the enhanced vocoder interface assembly, for vocoding voice data and for performing a power control and a handoff;

a global routing means for interfacing among the local router, other local routers and the BSM; and

a clock generating means for generating clocks necessary for controlling the BTS and the BSM, wherein the clocks are based on time and frequency clock signals received from a global positioning system (GPS).

11. (Original) The apparatus as recited in claim 10, wherein the enhanced vocoder interface assembly includes:

an ATM cell interface for interfacing the ATM cells through the local router and the T3 interface;

a cell bus controller for loading the ATM cell onto the cell bus;

a timing controller for generating a timing signal to be used for the ATM cell interface and E1 signal interface;

an E1 transceiver for transmitting/receiving the E1 signal to/from the MSC based on the E1 signal interface timing signal.

12. (Currently amended) The apparatus as recited in claim 11, ~~10,~~ wherein the cell bus controller includes:

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CHICAGO, ILLINOIS 60606
TELEPHONE (312) 913-0001

a bus arbiter for performing a timing control and a bus arbitration; and

a cubit device connected to the bus arbiter in parallel, for interfacing the ATM cells and exchanging the control signal.

13. (Original) The apparatus as recited in claim 10, wherein the enhanced vocoder operation assembly includes:

a cell bus controller for receiving the ATM cell transmitted through the cell bus and for transmitting the ATM cell through the cell bus;

a selector for selecting a vocoder to be used; and

digital signal processor for vocoding the voice data.

14. (Original) The apparatus as recited in claim 13, wherein the digital signal processor processes ten (10) channel signals.

15. (Currently amended) ~~The apparatus as recited in claim 1,~~ An apparatus for controlling a base transceiver station in an international mobile telecommunication system having a plurality of the base transceiver station (BTS), at least a base station controller (BSC), a base station management (BSM) and a mobile switching center (MSC), the apparatus comprising:

a local routing means for interfacing the BTS with the MSC, for processing a call and a No. 7 signal for providing alarms occurred in the BSC to the BSM;

a vocoding means for vocoding voice data received through the local routing means;

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HULBERT & BERGHOFF LLP
300 SOUTH WACKER DRIVE
CHICAGO, ILLINOIS 60606
TELEPHONE (312) 913-0001

a global routing means for interfacing among the local router, other local routers and the BSM; and

a clock generating means for generating clocks necessary for controlling the BTS and the BSM, wherein the clocks are based on time and frequency clock signals received from a global positioning system (GPS),

wherein the global routing means performs an OC-3 interface with the local routing means, an OC-3 ATM interface with a local routing means in another base station controller, an E1 or E3 interface with a base station management (BSM), and the OC-3 ATM interface with a packet switched data network.

16. (New) The apparatus as recited in claim 15, wherein the clock signals are provided by a clock generator that supports a plurality of BSC.

17. (New) The apparatus as recited in claim 15, wherein the local routing means uses communication protocols based on an ATM packet-routing method.

18. (New) The apparatus as recited in claim 15, wherein the vocoding means is communicatively coupled to the local routing means via E3/T3 links.

19. (New) The apparatus as recited in claim 15, wherein the local routing means collects alarms generated in the BSC and transmits collected alarms to the global routing means, for transmission in turn to the BSM.

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300 SOUTH WACKER DRIVE
CHICAGO, ILLINOIS 60606
TELEPHONE (312) 913-0001

20. (New) The apparatus as recited in claim 15, wherein the local routing means includes an operation and maintenance control processor that produces: (i) a switching control signal for ATM packet data, and (ii) a multiplexing/demultiplexing control signal for multiplexing and demultiplexing the ATM packet data.

21. (New) The apparatus as recited in claim 15, wherein vocoding means comprises a plurality of high-speed transcoder/selectors that communicatively couple to a local router.

McDONNELL BOEHNEN
HULBERT & BERGHOFF LLP
300 SOUTH WACKER DRIVE
CHICAGO, ILLINOIS 60606
TELEPHONE (312) 913-0001